

Work Order ID 147005

147005

Page 1

Wednesday, May 25, 2016 12:34:21 PM

Item ID: DSI 9744-011 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Heavy Duty Support
 Start Date: 5/25/2016 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 5/26/2016 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: dm Date: 16/05/25 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
DSI 9744	A								
100	Document Control	MAY 26 2016 00	DAS	6					MCS 16-05-26
100	DOCUMENT CONTROL		9-89						
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPP DSI9744-011 CHG001								
110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging									
120	QC4- 100% Inspect kits for completeness	0.00							
120									
QC	Memo	0.03							
Quality Control									

DAS
27
9-89
MAY 26 2016

DAS
6 28
9-89 9-89
MAY 26 2016

DAS
27
9-89
MAY 26 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 147005

Wednesday, May 25, 2016 12:34:21 PM

147005

Page 2

Item ID: DSI 9744-011

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Heavy Duty Support

Start Date: 5/25/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/26/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Packaging	0.00							
130						DAS			
Packaging	Memo	0.00				27			
Packaging	Identify and pack for shipping as per PPP DSI 9744-011					8-89			
	Location:					MAY 26 2016			
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.10							
Quality Control									

MAY 27 2016

mf
16-5-27

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Wednesday, May 25, 2016 12:34:27 PM

Page 1

Required Qty: 1.00

Comments: IPP REV:A 16.05.24 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D5380-1		Manufactured	No				Each	0.0000		1			68-6 82 SVC
D5380-1 Support													
D5380-3		Manufactured	No				Each	0.0000		1			68-6 82 SVC
D5380-3 Support Base													
DP460		Purchased	No				Each	0.0000		1			DAS 28 9-89
DP460 Scotch Weld Adhesive													
NAS1805-4P		Purchased	No				Each	24.0000		8			68-6 82 SVC
NAS1805-4P Nut													
				<u>Location</u>			<u>Loc Qty</u>	<u>Loc Code</u>					
				ST548			24						
				m134558			24						
NAS6704-21		Purchased	No				Each	24.0000		8			DAS 28 9-89
NAS6704-21 Bolt													
				<u>Location</u>			<u>Loc Qty</u>	<u>Loc Code</u>					
				ST548			24						
				m134558			24						

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

DART SERVICE INSTRUCTION

TO AMEND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D212-664 REV. 9

REF. CANADIAN STC: SH01-9

REF. FAA STC: SR01298NY

REF. EASA STC: EASA.IM.R.S.01304

REF. DGAC-MEXICO STC: IA-316/2015

1.0 PURPOSE:

The purpose of this Dart Service Instruction is to provide customers with instructions (on request) to replace the D4909-1 Support with a D5380-1/-3 Support on the D412-664-403 Heavy Duty High Aft Crosstubes.

2.0 INSTALLATION PROCEDURE:

Caution: Ensure crosstubes are not damaged during removal of supports.

- 2.1 Remove crosstube in accordance with ICA-D212-664 chapter 32.1.
- 2.2 Accurately mark location of existing D4909-1 Support and then remove the attaching hardware.
- 2.3 Break the seal around the support to remove it. Remove 3M DP460 adhesive between the crosstube and the support. Discard supports and all associated hardware.
- 2.4 Remove residual adhesive on the crosstube with Scotchbrite. Saturate a clean cotton cloth with Methyl Ethyl Ketone (MEK), 4105S Wash'n'Wipe Degreaser, or equivalent and wipe the crosstube surface clean.
- 2.5 If the paint finish has been Compromised underneath the support, the prime/paint finish should be removed down to the bare metal, degreased with Axalta 13205S aluminum cleaner, and then treated with Axalta Metalok 230S Adhesion Promoter or DOD-P-15328D Wash Primer per DSI 9735.
- 2.6 Touch up paint finish if required with MIL-P-85582 or MIL-P-23377 primer, and 2-3 coats of MIL-C-85285 polyurethane paint to match original finish and allow to fully cure.
- 2.7 Locate area on the crosstube for installation of D5380-1/-3 Heavy Duty Support Assembly with reference to Figure 2.
- 2.8 Abrade the mating surfaces of the crosstube and D5380-1/-3 support halves with 180-grit sandpaper. Saturate a clean cloth with MEK, 4105S Wash'n'Wipe Degreaser or equivalent and wipe clean until there is no residue.
- 2.9 Apply a 0.04" to 0.07" thick layer of 3M DP460 Adhesive onto the concave surface of the D5380-1 Upper Support Half and the D5380-3 Lower Support Half.
- 2.10 Install D5380-1 Upper Support Half onto the crosstube as shown in Figure 1 and install Qty (2) NAS6704-21 Bolts into opposing corners of the D5380-1 Support. Use the rocker beam as a guide to ensure proper orientation of the D5380-1/-3 Center Support in relation to the D4910-1 Chafing Shields.
- 2.11 Align the bolts with the holes on D5380-3 Lower Support Half and install onto the crosstube, reference Figure 2.
- 2.12 Install the remaining Qty (6) NAS6704-21 Bolts and Qty (8) NAS1805-4P Nuts, then evenly torque the nuts in a criss-cross pattern to 60-70 in-lbs. Ensure a minimum of 1.5 threads are in safety.
- 2.13 Wipe off excess adhesive using a clean cloth saturated with MEK, 4105S Wash'n'Wipe Degreaser or equivalent.
- 2.14 Fillet seal the edges of the D5380-1/-3 Support halves with Proseal PR1422 B1/2 or PR890 B1/2 prior to installing crosstube on aircraft. Allow DP460 adhesive and proseal to cure for 24 hours.
- 2.15 Reinstall crosstube in accordance with ICA-D212-664 Chapter 32.2.
- 2.16 Update aircraft log book to indicate installation of DSI 9744-011 Kit and adjust the weight and balance record for the aircraft with the weight and balance data provided in Section 4.0 of this Dart Service Instruction.

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

DATE: 16.04.07
CERT. NO.: SH01-9
ISSUE NO.: 3

APPROVED

A	NEW ISSUE	ML	16.04.07
REV.	DESCRIPTION	BY	DATE
DESIGN	ML	DART AEROSPACE LTD	
DRAWN	ML	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AJS	DRAWING NO.	REV. A
MFG. APPR.	DD	DSI 9744	SHEET 1 OF 3
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	HEAVY DUTY SUPPORT KIT	NTS
DATE	16.04.07	COPYRIGHT © 2016 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

3.0 PARTS LIST

QTY -011	PART NUMBER	DESCRIPTION
X	DSI 9744-011	HEAVY DUTY SUPPORT KIT
1	D5380-1	UPPER SUPPORT HALF
1	D5380-3	LOWER SUPPORT HALF
1 TUBE	3M DP460	ADHESIVE TUBE
8	NAS1805-4P	NUT
8	NAS6704-21	BOLT

4.0 WEIGHT AND BALANCE

The following table summarizes the net weight increase associated with the installation of the DSI 9744-011 Kit.

PART NUMBER	WEIGHT	LATERAL		LONGITUDINAL	
		STA	MOMENT	STA	MOMENT
DSI 9744-011 HEAVY DUTY SUPPORT KIT	1.1 lb (0.50 kg)	N/A	N/A	163.0 in (4.14 m)	179.3 in lb (2.07 m kg)

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

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CERT. NO.: SH01-9
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DESIGN	ML	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	AJS	DRAWING NO. DSI 9744	REV. A
MFG. APPR.	DD		SHEET 2 OF 3
APPROVED	WM	TITLE	SCALE
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D5380-1
UPPER SUPPORT HALF

NAS6704-21 BOLT

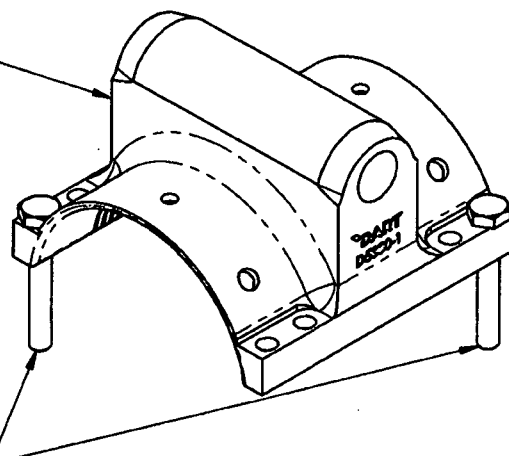


Figure 1 - Support Installation
Crosstube not shown for clarity

D412-664-403
CROSSTUBE
REF



NAS1805-4P
NUT
8 PL

Crosstube ϕ

D5380-1
UPPER SUPPORT HALF

NAS6704-21
BOLT
8 PL

D5380-3
LOWER SUPPORT HALF

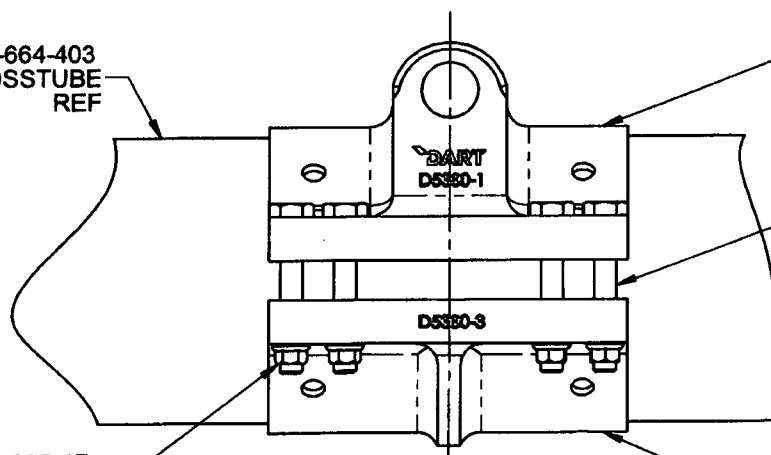


Figure 2 - Support Installation

CANADA
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DAO # 01-O-01

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Page 1

Wednesday, May 25, 2016 12:34:21 PM

Item ID: DSI 9744-011

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Heavy Duty Support

Start Date: 5/25/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/26/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Run Start *NR1*

Approvals: Process Plan: *dm*

Date: 16/05/25 Tooling:

Date:

Stop *NR2*

QC:

Date: SPC (Y/N):

Date:

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

DSI 9744

A

100

Document Control

MAY 26 2016

0.00

0.00

100

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP DSI9744-011 CHG001

9107 9 7 14VW MAY 26 2016

MAY 26 2016

MCS

110

Pick Kit

0.00

110

Packaging

Memo

0.00

Packaging

MAY 26 2016

0.00

0.00

120

QC4- 100% Inspect kits for completeness

0.00

120

QC

Memo

0.03

Quality Control

REFERENCE ONLY

3.0 PARTS LIST

QTY -011	PART NUMBER	DESCRIPTION
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